SEQUENCE LISTING

#7

<110> Seilhamer, Jeffrey J.
Lewicki, John
Scarborough, Robert M.
Porter, Gordon J.

<120> IMMUNOASSAYS FOR HUMAN AND CANINE BRAIN
NATRIURETIC PEPTIDE

<130> 219002025213

<140> 09/902,517
<141> 2001-07-09

<150> 09/287,892
<151> 1999-04-07

<150> 08/850,910
<151> 1997-05-05

<150> 07/477,226
<151> 1990-02-08

<150> 07/299,880
<151> 1989-01-19

<150> 07/206,470
<151> 1988-06-14

<150> 07/200,383
<151> 1988-05-31

<160> 50

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 26
<212> PRT
<213> Unknown

<220>
<223> A portion of human ANP and pBNP.

<400> 1
Gly Ser Gly Cys Phe Gly Arg Lys Met Asp Arg Ile Ser Ser Ser Ser
1 5 10 15
Gly Leu Gly Cys Lys Val Leu Arg Arg His
20 25

<210> 2
<211> 25
<212> PRT
<213> Unknown

<220>

<223> A portion of human ANP and the pBNP.

<400> 2
Arg Ser Ser Cys Phe Gly Gly Arg Met Asp Arg Ile Gly Ala Gln Ser
 1   5   10   15
Gly Leu Gly Cys Asn Ser Phe Arg Tyr
            20   25

<210> 3
<211> 26
<212> PRT
<213> Unknown

<220>
<223> A portion of human ANP and pBNP.

<400> 3
Asp Ser Gly Cys Phe Gly Arg Arg Leu Asp Arg Ile Gly Ser Leu Ser
 1   5   10   15
Gly Leu Gly Cys Asn Val Leu Arg Arg Tyr
            20   25

<210> 4
<211> 6
<212> PRT
<213> Unknown

<220>
<223> An additional N-terminal amino acid extension.

<400> 4
Ser Pro Lys Thr Met Arg
 1   5

<210> 5
<211> 17
<212> PRT
<213> Unknown

<220>
<223> Peptides having natriuretic activity.

<221> VARIANT
<222> (5)...(5)
<223> Xaa = Arg or Lys

<221> VARIANT
<222> (6)...(6)
<223> Xaa = Leu or Met

<221> VARIANT
<222> (10)...(10)
<223> Xaa = Gly or Ser

<221> VARIANT
<222> (12)...(12)
<223> Xaa = Leu or Ser

<400> 5
Cys Phe Gly Arg Xaa Xaa Asp Arg Ile Xaa Ser Xaa Ser Gly Leu Gly
 1   5   10   15
Cys

<210> 6
<211> 4
<212> PRT
<213> Unknown

<220>
<223> R1

<221> VARIANT
<222> (1)...(1)
<223> Xaa = His, Arg or Gln

<221> VARIANT
<222> (2)...(2)
<223> Xaa = Lys, Asp or Gly

<400> 6
Xaa Xaa Ser Gly
 1

<210> 7
<211> 5
<212> PRT
<213> Unknown

<220>
<223> R1

<221> VARIANT
<222> (1)...(1)
<223> Xaa = Met or Val

<221> VARIANT
<222> (2)...(2)
<223> Xaa = His, Arg or Gln

<221> VARIANT
<222> (3)...(3)
<223> Xaa = Lys, Asp or Gly

<400> 7
Xaa Xaa Xaa Ser Gly
 1   5

<210> 8
<211> 6
<212> PRT
<213> Unknown

<220>

<223> R1

<221> VARIANT
<222> (1)...(1)
<223> Xaa = Thr or Met

<221> VARIANT
<222> (2)...(2)
<223> Xaa = Met or Val

<221> VARIANT
<222> (3)...(3)
<223> Xaa = His, Arg or Gln

<221> VARIANT
<222> (4)...(4)
<223> Xaa = Lys, Asp or Gly

<400> 8
Xaa Xaa Xaa Xaa Ser Gly
 1   5

<210> 9
<211> 7
<212> PRT
<213> Unknown

<220>
<223> R1

<221> VARIANT
<222> (2)...(2)
<223> Xaa = Thr or Met

<221> VARIANT
<222> (3)...(3)
<223> Xaa = Met or Val

<221> VARIANT
<222> (4)...(4)
<223> Xaa = His, Arg or Gln

<221> VARIANT
<222> (5)...(5)
<223> Xaa = Lys, Asp or Gly

<400> 9
Lys Xaa Xaa Xaa Xaa Ser Gly
 1   5

<210> 10
<211> 8
<212> PRT
<213> Unknown

<220>
<223> R1

<221> VARIANT
<222> (3)...(3)
<223> Xaa = Thr or Met

<221> VARIANT
<222> (4)...(4)
<223> Xaa = Met or Val

<221> VARIANT
<222> (5)...(5)
<223> Xaa = His, Arg or Gln

<221> VARIANT
<222> (6)...(6)
<223> Xaa = Lys, Asp or Gly

<400> 10
Pro Lys Xaa Xaa Xaa Xaa Ser Gly
 1   5

<210> 11
<211> 9
<212> PRT
<213> Unknown

<220>
<223> R1

<221> VARIANT
<222> (4)...(4)
<223> Xaa = Thr or Met

<221> VARIANT
<222> (5)...(5)
<223> Xaa = Met or Val

<221> VARIANT
<222> (6)...(6)
<223> Xaa = His, Arg or Gln

<221> VARIANT
<222> (7)...(7)
<223> Xaa = Lys, Asp or Gly

<400> 11
Ser Pro Lys Xaa Xaa Xaa Xaa Ser Gly
 1   5

<210> 12
<211> 4
<212> PRT
<213> Unknown

<220>
<223> R2

<221> VARIANT
<222> (1)...(1)
<223> Xaa = Asn or Lys

<400> 12
Xaa Val Leu Arg
 1

<210> 13
<211> 5
<212> PRT
<213> Unknown

<220>
<223> R2

<221> VARIANT
<222> (1)...(1)
<223> Xaa = Asn or Lys

<221> VARIANT
<222> (5)...(5)
<223> Xaa = Arg or Lys

<400> 13
Xaa Val Leu Arg Xaa
 1   5

<210> 14
<211> 6
<212> PRT
<213> Unknown

<220>
<223> R2

<221> VARIANT
<222> (1)...(1)
<223> Xaa = Asn or Lys

<221> VARIANT
<222> (5)...(5)
<223> Xaa = Arg or Lys

<221> VARIANT
<222> (6)...(6)
<223> Xaa = Tyr or His

<400> 14
Xaa Val Leu Arg Xaa Xaa
 1   5

<210> 15
<211> 17
<212> PRT
<213> Unknown

<220>
<223> Proviso formula (1)

<400> 15
Cys Phe Gly Arg Arg Leu Asp Arg Ile Gly Ser Leu Ser Gly Leu Gly
 1   5   10   15
Cys

<210> 16
<211> 6
<212> PRT
<213> Unknown

<220>
<223> Proviso formula (1)

<400> 16
Asn Val Leu Arg Arg Tyr
 1   5

<210> 17
<211> 1504
<212> DNA
<213> Unknown

<220>
<223> cDNA encoding porcine BNP.

<400> 17
gaattccagg ctgctaggaa gtgaaaagtg aacctggacc cagctcagcg gcagcagcag 60
cggcagcagg cagcagcctc tatcctctcc tccagccaca tgggcccccg gatggcgctt 120
ccccgcgtgc tcctgctcct gttcttgcac ctgttgctgc taggatgccg ttcccatcca 180
ctgggtggcg ctggcctggc ctcagaactg ccagggatac aggtgagccc tgatgaactg 240
cttagacttg gttggctggg agggcgcgga cagcagcaac taacgggtcc ccacctactg 300
ttccaagagg gctctaacct cctttgggaa ctagtgataa ggggtttaga aggcagccag 360
gctgggggtg aggacccgct cccaaggcag ttggttcgct tcagcaccat caagagtgat 420
gggtccaggt gcgagttcct gaggctcggg ctcccccacc catcccagga gctgctggac 480
cgcctgcgag acagggtctc cgagctgcag gcgacgggac ggacctggag ccccctccggc 540
aggaccgtgg cctcacagaa gcctgggagg cgagggaagc agcccccacg ggggttcttg 600
ggccccgcag tagcatcttc caagtcctcc ggggaatacg cagccccaag acgatgcgtg 660
actctggctg ctttgggcgg aggctggacc ggatcggctc cctcagcggc ctgggctgca 720
atggtgagca cccaccccat tcccactgca cgccccggtt agcatcactt ctgggtttga 780
tgtctctggg accaaactcc gagaaaagga cacctggata tcactctttc ttgttgccag 840
tcctcaaggc caaggagcgc cttcctggaa aaattaaatt tggacagcat tcactagcat 900
gactatgagt ccccacccac cttctcgcca ccccctgcct ctctcaccca aggcggcaga 960
attactttag gatgtaaatt ctgtcattgc ctggctgccg ctcctgggag caaaaagaga 1020
actaaacctc ttcccccctgg tttcccctca actgtctgtg gctgcaaagg cagagggcag 1080
gatcaccagg gtgatgacaa gtcccagctt acaaggagga aactcaggtc cagagagatg 1140
gattatccca aagccccaaa catccagttc tgctgaagaa ggcgggtggc aggggtggca 1200
cgtggtgggg ggaagcccag gtcctgcctg cctctcaccc taatgtcatc ctcaccctct 1260
ctctcccccc cacagtgctc aggaggtact gagaagtcct ggctgacaac ctctgtgtcc 1320
gcttctccaa cgcccctccc ctgctcccct tcaaagcaac tcctgttttt atttatgtat 1380
ttatttattt atttatttgg tggttgtata taagacggtt cttatttgtg agcacatttt 1440
ttccatggtg aaataaagtc aacattagag ctctgtcttt tgaaaaaaaa aaaaaaagga 1500
attc 1504

<210> 18
<211> 177
<212> PRT
<213> Unknown

<220>
<223> Amino acids encoding porcine BNP.

<400> 18
Met Gly Pro Arg Met Ala Leu Pro Arg Val Leu Leu Leu Leu Phe Leu
 1   5   10   15
His Leu Leu Leu Leu Gly Cys Arg Ser His Pro Leu Gly Gly Ala Gly
            20   25   30
Leu Ala Ser Glu Leu Pro Gly Ile Gln Val Ser Pro Asp Glu Leu Leu
        35   40   45
Arg Leu Gly Trp Leu Gly Gly Arg Gly Gln Gln Gln Leu Thr Gly Pro
    50   55   60
His Leu Leu Phe Gln Glu Gly Ser Asn Leu Leu Trp Glu Leu Val Ile
65   70   75   80
Arg Gly Leu Glu Gly Ser Gln Ala Gly Gly Glu Asp Pro Leu Pro Arg
                85   90   95
Gln Leu Val Arg Phe Ser Thr Ile Lys Ser Asp Gly Ser Arg Cys Glu
            100   105   110
Phe Leu Arg Leu Gly Leu Pro His Pro Ser Gln Glu Leu Leu Asp Arg
        115   120   125
Leu Arg Asp Arg Val Ser Glu Leu Gln Ala Thr Gly Arg Thr Trp Ser
    130   135   140
Pro Ser Gly Arg Thr Val Ala Ser Gln Lys Pro Gly Arg Arg Gly Lys
145   150   155   160
Gln Pro Pro Arg Gly Phe Leu Gly Pro Ala Val Ala Ser Ser Lys Ser
                165   170   175
Ser

<210> 19
<211> 13
<212> PRT
<213> Unknown

<220>
<223> Amino acid sequence encoding porcine BNP.

<400> 19
Pro Ala Cys Ser Cys Ser Cys Ser Cys Thr Cys Cys Cys
 1   5   10

<210> 20
<211> 20
<212> PRT
<213> Unknown

<220>
<223> Amino acid sequence encoding porcine BNP.

<400> 20
Asp Ala Val Pro Ile His Trp Val Ala Leu Ala Trp Pro Gln Asn Cys
 1   5   10   15

Gln Gly Tyr Arg
20

<210> 21
<211> 18
<212> PRT
<213> Unknown

<220>
<223> Amino acid sequence encoding porcine BNP

<400> 21
Ala Leu Met Asn Cys Leu Asp Leu Val Gly Trp Glu Gly Ala Asp Ser
1 5 10 15
Ser Asn

<210> 22
<211> 16
<212> PRT
<213> Unknown

<220>
<223> Amino acid sequence encoding porcine BNP

<400> 22
Arg Val Pro Thr Tyr Cys Ser Lys Arg Ala Leu Thr Ser Phe Gly Asn
1 5 10 15

<210> 23
<211> 30
<212> PRT
<213> Unknown

<220>
<223> Amino acid sequence encoding porcine BNP

<400> 23
Lys Ala Ala Arg Leu Gly Val Arg Thr Arg Ser Gln Gly Ser Trp Phe
1 5 10 15
Ala Ser Ala Pro Ser Arg Val Met Gly Pro Gly Ala Ser Ser
20 25 30

<210> 24
<211> 56
<212> PRT
<213> Unknown

<220>
<223> Amino acid sequence encoding porcine BNP

<400> 24
Gly Ser Gly Ser Pro Thr His Pro Arg Ser Cys Trp Thr Ala Cys Glu
1 5 10 15
Thr Gly Ser Pro Ser Cys Arg Arg Arg Asp Gly Pro Gly Ala Pro Pro
20 25 30
Ala Gly Pro Trp Pro His Arg Ser Leu Gly Gly Glu Gly Ser Ser Pro

```
        35                  40                  45
His Gly Gly Ser Trp Ala Pro Gln
    50                  55

<210> 25
<211> 6
<212> PRT
<213> Unknown

<220>
<223> Amino acid sequence encoding porcine BNP

<400> 25
His Leu Pro Ser Pro Pro
 1               5

<210> 26
<211> 36
<212> PRT
<213> Unknown

<220>
<223> Amino acid sequence encoding porcine BNP

<400> 26
Pro Arg Ala Pro Ala Pro Val Leu Ala Pro Val Ala Ala Arg Met Pro
 1               5                  10                  15
Phe Pro Ser Thr Gly Trp Arg Trp Pro Gly Leu Arg Thr Ala Arg Asp
            20                  25                  30
Thr Gly Glu Pro
        35

<210> 27
<211> 23
<212> PRT
<213> Unknown

<220>
<223> Amino acid sequence encoding porcine BNP

<400> 27
Thr Trp Leu Ala Gly Arg Ala Arg Thr Ala Ala Thr Asn Gly Ser Pro
 1               5                  10                  15
Pro Thr Val Pro Arg Gly Leu
            20

<210> 28
<211> 17
<212> PRT
<213> Unknown

<220>
<223> Amino acid sequence encoding porcine BNP

<400> 28
Pro Pro Leu Gly Thr Ser Asp Lys Gly Phe Arg Arg Gln Pro Gly Trp
 1               5                  10                  15
```

Gly

<210> 29
<211> 15
<212> PRT
<213> Unknown

<220>
<223> Amino acid sequence encoding BNP

<400> 29
Gly Pro Ala Pro Lys Ala Val Gly Ser Leu Gln His His Gln Glu
 1   5   10   15

<210> 30
<211> 106
<212> PRT
<213> Unknown

<220>
<223> Amino acid encoding porcine BNP

<400> 30
Trp Val Gln Val Arg Val Pro Glu Ala Arg Ala Pro Pro Pro Ile Pro
 1   5   10   15
Gly Ala Ala Gly Pro Pro Ala Arg Gln Gly Leu Arg Ala Ala Gly Asp
            20   25   30
Gly Thr Asp Leu Glu Pro Leu Arg Gln Asp Arg Gly Leu Thr Glu Ala
        35   40   45
Trp Glu Ala Arg Glu Ala Ala Pro Thr Gly Val Leu Gly Pro Arg Ser
    50   55   60
Ser Ile Phe Gln Val Leu Arg Gly Ile Arg Ser Pro Lys Thr Met Arg
65   70   75   80
Asp Ser Gly Cys Phe Gly Arg Arg Leu Asp Arg Ile Gly Ser Leu Ser
                85   90   95
Gly Leu Gly Cys Asn Val Leu Arg Arg Tyr
            100   105

<210> 31
<211> 60
<212> DNA
<213> Unknown

<220>
<223> Oligonucleotides

<400> 31
tccagctgct tcgggggcag gatggacagg attggagccc agagcggact gggctgtaac 60

<210> 32
<211> 20
<212> PRT
<213> Unknown

<220>
<223> Amino acids encoding pBNP

<400> 32
Ser Ser Cys Phe Gly Gly Arg Met Asp Arg Ile Gly Ala Gln Ser Gly
 1   5   10   15
Leu Gly Cys Asn
            20

<210> 33
<211> 60
<212> DNA
<213> Unknown

<220>
<223> Oligonucleotides

<221> misc_feature
<222> (1)...(60)
<223> n = A,T,C or G

<400> 33
acnggntgct tgggncgncg nctngaccgn atnggntcnc tntcnggnct nggntgcaac 60

<210> 34
<211> 20
<212> PRT
<213> Unknown

<220>
<223> Amino acids encoding pBNP

<400> 34
Ser Gly Cys Phe Gly Arg Arg Leu Asp Arg Ile Gly Ser Leu Ser Gly
 1   5   10   15
Leu Gly Cys Asn
            20

<210> 35
<211> 60
<212> DNA
<213> Unknown

<220>
<223> Oligonucleotides

<400> 35
aggccgacga agcccgcgtc cgacctgtcc taacctaggg actcgcctga cccgacattg 60

<210> 36
<211> 60
<212> DNA
<213> Unknown

<220>
<223> Oligonucleotide

<400> 36
tcgccgacga agccgtcttc tgagctgtct tagccgtcgg agtcgccgga gccgacgttg 60

<210> 37
<211> 60
<212> DNA
<213> Unknown

<220>
<223> Oligonucleotide

<400> 37
aggtcgacga agcccccgtc ctacctgtcc taacctcggg tctcgcctga cccgacattg 60

<210> 38
<211> 1507
<212> DNA
<213> Unknown

<220>
<223> cDNA of Fig 1

<400> 38
gaattccagg ctgctaggaa gtgaaaagtg aacctggacc cagctcagcg gcagcagcag 60
cggcagcagg cagcagcctc tatcctctcc tccagccaca tgggcccccg gatggcgctt 120
ccccgcgtgc tcctgctcct gttcttgcac ctgttgctgc taggatgccg ttcccatcca 180
ctgggtggcg ctggcctggc ctcagaactg ccagggatac aggtgagccc tgatgaactg 240
cttagacttg gttggctggg agggcgcgga cagcagcaac taacgggtcc ccacctactg 300
ttccaagagg gctctaacct cctttgggaa ctagtgataa ggggttagaa ggcagccagg 360
ctgggggtga ggaccccgct cccaaggcag ttggttcgct tcagcaccat caagagtgat 420
gggtccaggt gcgagttcct gaggctcggg ctcccccacc catcccagga gctgctggac 480
cgcctgcgag acagggtctc cgagctgcag gcggagcgga cggacctgga gcccctccgg 540
caggaccgtg gcctcacaga agcctgggag gcgagggaag cagcccccac gggggttctt 600
gggccccgca gtagcatctt ccaagtcctc cggggaatac gcagccccaa gacgatgcgt 660
gactctggct gctttgggcg gaggctggac cggatcggct ccctcagcgg cctgggctgc 720
aatggtgagc acccaccccc attcccactg cacgccccgg ttagcatcac ttctgggttt 780
gatgtctctg gggaccaaac tccgagaaaa ggacacctgg atatcactct ttcttgttgc 840
cagtcctcaa ggccaaggag cgccttcctg gaaaaattaa atttggacag cattcactag 900
catgactatg agtccccacc caccttctcg ccacccccctg cctctctcac ccaaggcggc 960
agaattactt taggatgtaa attctgtcat tgcctggctg ccgctcctgg gagcaaaaag 1020
agaactaaac ctcttccccc tggtttcccc tcaactgtct gtggctgcaa aggcagaggg 1080
caggatcacc agggtgatga caagtcccag cttacaagga ggaaactcag gtccagagag 1140
atggattatc ccaaagcccc aaacatccag ttctgctgaa gaaggcgggt ggcaggggtg 1200
gcacgtggtg gggggaagcc caggtcctgc ctgcctctca ccctaatgtc atcctcaccc 1260
tctctctccc ccccacagtg ctcaggaggt actgagaagt cctggctgac aacctctgtg 1320
tccgcttctc caacgcccct cccctgctcc ccttcaaagc aactcctgtt tttatttatg 1380
tatttattta tttatttatt tggtggttgt atataagacg gttcttattt gtgagcacat 1440
tttttccatg gtgaaataaa gtcaacatta gagctctgtc ttttgaaaaa aaaaaaaaaa 1500
ggaattc 1507

<210> 39
<211> 131
<212> PRT
<213> Unknown

<220>
<223> Additional intron of Fig 1

<400> 39

```
Met Gly Pro Arg Met Ala Leu Pro Arg Val Leu Leu Leu Leu Phe Leu
 1               5                  10                  15
His Leu Leu Leu Leu Gly Cys Arg Ser His Pro Leu Gly Gly Ala Gly
            20                  25                  30
Leu Ala Ser Glu Leu Pro Gly Ile Gln Glu Leu Leu Asp Arg Leu Arg
        35                  40                  45
Asp Arg Val Ser Glu Leu Gln Ala Glu Arg Thr Asp Leu Glu Pro Leu
    50                  55                  60
Arg Gln Asp Arg Gly Leu Thr Glu Ala Trp Glu Ala Arg Glu Ala Ala
65                  70                  75                  80
Pro Thr Gly Val Leu Gly Pro Arg Ser Ser Ile Phe Gln Val Leu Arg
                85                  90                  95
Gly Ile Arg Ser Pro Lys Thr Met Arg Asp Ser Gly Cys Phe Gly Arg
            100                 105                 110
Arg Leu Asp Arg Ile Gly Ser Leu Ser Gly Leu Gly Cys Asn Val Leu
        115                 120                 125
Arg Arg Tyr
    130
```

<210> 40
<211> 707
<212> DNA
<213> Unknown

<220>
<223> Coding portions of pBNP encoding cDNA

<400> 40
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gaattccagg ctgctaggaa gtgaaaagtg aacctggacc cagctcagcg gcagcagcag      60
cggcagcagg cagcagcctc tatcctctcc tccagccaca tgggcccccg gatggcgctt     120
ccccgcgtgc tcctgctcct gttcttgcac ctgttgctgc taggatgccg ttcccatcca     180
ctgggtggcg ctggcctggc ctcagaactg ccagggatac aggagctgct ggaccgcctg     240
cgagacaggg tctccgagct gcaggcggag cggacggacc tggagccccc ccggcaggac     300
cgtggcctca cagaagcctg ggaggcgagg gaagcagccc ccacgggggt tcttgggccc     360
cgcagtagca tcttccaagt cctccgggga atacgcagcc ccaagacgat gcgtgactct     420
ggctgctttg ggcggaggct ggaccggatc ggctccctca gcggcctggg ctgcaatgtg     480
ctcaggaggt actgagaagt cctggctgac aacctctgtg tccgcttctc caacgccccc     540
cccctgctcc ccttcaaagc aactcctgtt tttatttatg tatttattta tttatttatt     600
tggtggttgt atataagacg gttcttattt gtgagcacat tttttccatg gtgaaataaa     660
gtcaacatta gagctctgtc ttttgaaaaa aaaaaaaaaa ggaattc                   707
```

<210> 41
<211> 131
<212> PRT
<213> Unknown

<220>
<223> Coding portions of pBNP

<400> 41
```
Met Gly Pro Arg Met Ala Leu Pro Arg Val Leu Leu Leu Leu Phe Leu
 1               5                  10                  15
His Leu Leu Leu Leu Gly Cys Arg Ser His Pro Leu Gly Gly Ala Gly
            20                  25                  30
Leu Ala Ser Glu Leu Pro Gly Ile Gln Glu Leu Leu Asp Arg Leu Arg
        35                  40                  45
Asp Arg Val Ser Glu Leu Gln Ala Glu Arg Thr Asp Leu Glu Pro Leu
```

```
    50                  55                  60
Arg Gln Asp Arg Gly Leu Thr Glu Ala Trp Glu Ala Arg Glu Ala Ala
65                  70                  75                  80
Pro Thr Gly Val Leu Gly Pro Arg Ser Ser Ile Phe Gln Val Leu Arg
                85                  90                  95
Gly Ile Arg Ser Pro Lys Thr Met Arg Asp Ser Gly Cys Phe Gly Arg
            100                 105                 110
Arg Leu Asp Arg Ile Gly Ser Leu Ser Gly Leu Gly Cys Asn Val Leu
        115                 120                 125
Arg Arg Tyr
    130
```

<210> 42
<211> 1804
<212> DNA
<213> Unknown

<220>
<223> DNA for the coding portions of the gene encoding a canine protein with natriuretic activity

<400> 42

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cgatcaggga tgttggggcg gaggaaacgg agggaaggag ggagcggagg aggcccgagg      60
actgttggtg tccccctcct gccctttttgg ggccaggccc acttctatac aaggcctgct     120
ctccagcctc caccccggcg ggtatggtgc aggcgcggag gggcgcattc ccccgccctg     180
agctcagcgg ccggaatgcg gccgataaat cagagataac cccaggcgcg ggataaggga     240
taaaaagccc ccgttgccgc gggatccagg agagcacccg cgccccaagc ggtgacactc     300
gaccccggtc gcagcgcagc agctcagcag ccggacgtct ctttccccac ttctctccag     360
cgacatggag ccctgcgcag cgctgccccg ggccctcctg ctcctcctgt tcttgcacct     420
gtcgccactc ggaggccgcc cccacccgct gggcggccgc agccccgcct cggaagcctc     480
ggaagcctca gaagcctcgg ggttgtgggc cgtgcaggtg agcgctcagc ctgcctgaag     540
gccgcggcgg gtggcagcag gtcacggggg cttagccact gtcccaagtc ctcagtctcc     600
cttgggaatt agtgataagg gaatcagaaa gtgacgagat tgggtgccag gactccatac     660
ccaaggcggc ggcttcactt gggtgcaagg gtggttccgc cccggcgtgg gttcctgagg     720
ctcaggccgt ccattgcagg agctgctggg ccgtctgaag gacgcagttt cagagctgca     780
ggcagagcag ttggccctgg aacccctgca ccggagccac agccccgcag aagccccgga     840
ggccggagga acgccccgtg gggtccttgc accccatgac agtgtcctcc aggccctgag     900
aagactacgc agccccaaga tgatgcacaa gtcagggtgc tttggccgga ggctggaccg     960
gatcggctcc ctcagtggcc tgggctgcaa tggtaagccg cctccctgcc gccttggctc    1020
cccctcccca gccccctggg ttcgaccctt ggaacccctt ctgggtttgt tgtctcgggg    1080
gatcacactc tgaggaaagg acatctggac atcgctcctt cttgctgaca gtcctaaggg    1140
ccaaggagta cgtttctgga aatactacgt gtggacatcg ttgtccaggg tccctaccca    1200
cctcctagcc ccctcctgcc tctcgcaccc aaagggcaga atcatcttag gatggaatca    1260
gtcgttgtct ggaagcatct ccttggagca gaaagagtcc taaacatcgt cctcgtagct    1320
ctctctgtct gtctgtagcc acgaaggcag aggtcagggt caccagggca gtgatgattc    1380
ccagttaaca gaggaggaga ctgaggtcta gagagatgga ttattccaaa gcctcaaaca    1440
tccagatcgg ctgagggtgg ggttggtggc agggatggct cctgggcttg ggaagctcgg    1500
atcctgcctc agtctcccac ctgacgccat catccccctc tctctcctcc cacagtgctg    1560
agaaagtatt aaggaggaag tcccgactgc ccacatctgc attggattct tcagcagccc    1620
ctgagccccc tggaagcaga tcttatttat tcgtatttat ttatttattt atttcgattg    1680
ttttatataa gatgatcctg acgcccgagc acggattttc cacggtgaaa taaagtcaac    1740
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aaaa                                                                1804
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<210> 43
<211> 131
<212> PRT

<213> Unknown

<220>
<223> Protein sequence for the coding portions of the gene encoding a canine protein with natriuretic activity.

<400> 43

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Met Glu Pro Cys Ala Ala Leu Pro Arg Ala Leu Leu Leu Leu Leu Phe
 1               5                  10                  15
Leu His Leu Ser Pro Leu Gly Gly Arg Pro His Pro Leu Gly Gly Arg
            20                  25                  30
Ser Pro Ala Ser Glu Ala Ser Glu Ala Ser Glu Leu Leu Gly Arg Leu
        35                  40                  45
Lys Asp Ala Val Ser Glu Leu Gln Ala Glu Gln Leu Ala Leu Glu Pro
    50                  55                  60
Leu His Arg Ser His Ser Pro Ala Glu Ala Pro Glu Ala Gly Gly Thr
65                  70                  75                  80
Pro Arg Gly Val Leu Ala Pro His Asp Ser Val Leu Gln Ala Leu Arg
                85                  90                  95
Arg Leu Arg Ser Pro Lys Met Met His Lys Ser Gly Cys Phe Gly Arg
            100                 105                 110
Arg Leu Asp Arg Ile Gly Ser Leu Ser Gly Leu Gly Cys Asn Val Leu
        115                 120                 125
Arg Lys Tyr
    130
```

<210> 44
<211> 1519
<212> DNA
<213> Unknown

<220>
<223> DNA encoding human NRP

<400> 44

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cccacggtgt cccgaggagc caggaggagc accccgcagg ctgagggcag gtgggaagca      60
aacccggacg catcgcagca gcagcagcag cagcagaagc agcagcagca gcctccgcag     120
tccctccaga gacatggatc cccagacagc accttcccgg gcgctcctgc tcctgctctt     180
cttgcatctg gctttcctgg gaggtcgttc ccacccgctg ggcagccccg gttcagcctc     240
ggacttggaa acgtccgggt tacaggtgag agcggagggc agctcagggg gattggacag     300
cagcaatgaa agggtcctca cctgctgtcc caagaggccc tcatctttcc tttggaatta     360
gtgataaagg aatcagaaaa tggagagact gggtgccctg accctgtacc caaggcagtc     420
ggttcacttg ggtgccatga agggctggtg agccaggggt gggtccctga ggcttggacg     480
cccccattca ttgcaggagc agcgcaacca tttgcagggc aaactgtcgg agctgcaggt     540
ggagcagaca tccctggagc ccctccagga gagcccccgt cccacaggtg tctggaagtc     600
ccgggaggta gccaccgagg gcatccgtgg gcaccgcaaa atggtcctct acaccctgcg     660
ggcaccacga agccccaaga tggtgcaagg gtctggctgc tttgggagga agatggaccg     720
gatcagctcc tccagtggcc tgggctgcaa aggtaagcac cccctgccac cccggccgcc     780
ttcccccatt ccagtgtgtg acactgttag agtcactttg gggtttgttg tctctgggaa     840
ccacactctt tgagaaaagg tcacctggac atcgcttcct cttgttaaca gccttcaggg     900
ccaaggggtg cctttgtgga attagtaaat gtgggcttat ttcattacca tgcccacaat     960
accttctccc cacctcctac ttcttatcaa aggggcagaa tctcctttgg gggtctgttt    1020
atcatttggc agccccccag tggtgcagaa agagaaccaa acatttcctc ctggtttcct    1080
ctaaactgtc tatagtctca aaggcagaga gcaggatcac cagagcaatg ataatcccca    1140
atttacagat gaggaaactg aggctcagag agttgcatta agcctcaaac gtctgatgac    1200
taacagggtg gtgggtggca cacgatgagg taagctcagc ccctgcctcc atctcccacc    1260
```

ctaaccatca tcaccctctc tctttccctg acagtgctga ggcggcatta agaggaagtc 1320
ctggctgcag acacctgctt ctgattccac aaggggcttt ttcctcaacc ctgtggccct 1380
catctttcct ttggaattag tgataaagga atcagaaaat ggagagactg ggtgccctga 1440
ccctgtaccc aaggcagtcg gttcacttgg gtgccatgaa gggcctggtg agccaggggt 1500
tgggtccctg aggctttta 1519

<210> 45
<211> 134
<212> PRT
<213> Unknown

<220>
<223> Deduced amino acid sequence of the human NRP

<400> 45
Met Asp Pro Gln Thr Ala Pro Ser Arg Ala Leu Leu Leu Leu Leu Phe
1 5 10 15
Leu His Leu Ala Phe Leu Gly Gly Arg Ser His Pro Leu Gly Ser Pro
20 25 30
Gly Ser Ala Ser Asp Leu Glu Thr Ser Gly Leu Gln Glu Gln Arg Asn
35 40 45
His Leu Gln Gly Lys Leu Ser Glu Leu Gln Val Glu Gln Thr Ser Leu
50 55 60
Glu Pro Leu Gln Glu Ser Pro Arg Pro Thr Gly Val Thr Lys Ser Arg
65 70 75 80
Glu Val Ala Thr Glu Gly Ile Arg Gly His Arg Lys Met Val Leu Tyr
85 90 95
Thr Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln Gly Ser Gly Cys
100 105 110
Phe Gly Arg Lys Met Asp Arg Ile Ser Ser Ser Ser Gly Leu Gly Cys
115 120 125
Lys Val Leu Arg Arg His
130

<210> 46
<211> 131
<212> PRT
<213> Unknown

<220>
<223> Comparison sequences of the prepro forms of the
porcine proteins of the invention

<400> 46
Met Gly Pro Arg Met Ala Leu Pro Arg Val Leu Leu Leu Leu Phe Leu
1 5 10 15
His Leu Leu Leu Leu Gly Cys Arg Ser His Pro Leu Gly Gly Ala Gly
20 25 30
Leu Ala Ser Glu Leu Pro Gly Ile Gln Glu Leu Leu Asp Arg Leu Arg
35 40 45
Asp Arg Val Ser Glu Leu Gln Ala Glu Arg Thr Asp Leu Glu Pro Leu
50 55 60
Arg Gln Asp Arg Gly Leu Thr Glu Ala Trp Glu Ala Arg Glu Ala Ala
65 70 75 80
Pro Thr Gly Val Leu Gly Pro Arg Ser Ser Ile Phe Gln Val Leu Arg
85 90 95
Gly Ile Arg Ser Pro Lys Thr Met Arg Asp Ser Gly Cys Phe Gly Arg

```
            100                 105                 110
Arg Leu Asp Arg Ile Gly Ser Leu Ser Gly Leu Gly Cys Asn Val Leu
        115                 120                 125
Arg Arg Tyr
    130

<210> 47
<211> 132
<212> PRT
<213> Unknown

<220>
<223> Comparison sequence of the prepro forms of the
      canine proteins of the invention

<400> 47
Met Glu Pro Cys Ala Ala Leu Pro Arg Ala Leu Leu Leu Leu Leu Phe
 1               5                  10                  15
Leu His Leu Ser Pro Leu Gly Gly Arg Pro His Pro Leu Gly Gly Arg
            20                  25                  30
Ser Pro Ala Ser Glu Ala Ser Glu Ala Ser Glu Leu Leu Gly Arg Leu
        35                  40                  45
Lys Asp Ala Val Ser Glu Leu Gln Ala Glu Gln Leu Ala Leu Glu Pro
    50                  55                  60
Leu Arg His Arg Ser His Ser Pro Ala Ala Trp Pro Ala Arg Gly Gly
65                  70                  75                  80
Thr Pro Arg Gly Val Leu Ala Pro His Asp Ser Val Leu Gln Ala Leu
                85                  90                  95
Arg Arg Leu Arg Ser Pro Lys Met Met His Lys Ser Gly Cys Phe Gly
            100                 105                 110
Arg Arg Leu Asp Arg Ile Gly Ser Leu Ser Gly Leu Gly Cys Asn Val
        115                 120                 125
Leu Arg Lys Tyr
    130

<210> 48
<211> 134
<212> PRT
<213> Unknown

<220>
<223> Comparison sequence of the prepro forms of the
      human proteins of the invention

<400> 48
Met Asp Pro Gln Thr Ala Pro Ser Arg Ala Leu Leu Leu Leu Leu Phe
 1               5                  10                  15
Leu His Leu Ala Phe Leu Gly Gly Arg Ser His Pro Leu Gly Ser Pro
            20                  25                  30
Gly Ser Ala Ser Asp Leu Glu Thr Ser Gly Leu Gln Glu Gln Arg Asn
        35                  40                  45
His Leu Gln Gly Lys Leu Ser Glu Leu Gln Val Glu Gln Thr Ser Leu
    50                  55                  60
Glu Pro Leu Gln Glu Ser Pro Arg Pro Thr Gly Val Trp Lys Ser Arg
65                  70                  75                  80
Glu Val Ala Thr Glu Gly Ile Arg Gly His Arg Lys Met Val Leu Tyr
                85                  90                  95
```

```
Thr Leu Arg Ala Pro Arg Ser Pro Lys Met Val Gln Gly Ser Gly Cys
            100                 105                 110
Phe Gly Arg Lys Met Asp Arg Ile Ser Ser Ser Ser Gly Leu Gly Cys
        115                 120                 125
Lys Val Leu Arg Arg His
    130
```

<210> 49
<211> 32
<212> PRT
<213> Unknown

<220>
<223> R2

<400> 49

```
Ser Pro Lys Met Val Gln Gly Ser Gly Cys Phe Gly Arg Lys Met Asp
 1               5                  10                  15
Arg Ile Ser Ser Ser Ser Gly Leu Gly Cys Lys Val Leu Arg Arg His
            20                  25                  30
```

<210> 50
<211> 41
<212> PRT
<213> Unknown

<220>
<223> R2

<400> 50

```
Ser Pro Lys Met Met His Lys Ser Gly Cys Phe Gly Arg Arg Leu Asp
 1               5                  10                  15
Arg Ile Gly Ser Leu Ser Gly Leu Gly Cys Ser Pro Lys Met Met His
            20                  25                  30
Lys Ser Gly Asn Val Leu Arg Lys Tyr
        35                  40
```